

a summary. Therefore, applicants respectfully submit the objection and any requirement related thereto should be withdrawn.

IN THE CLAIMS

The office action states claims 1-28 are pending and rejected in the February 24, 2005 office action. Applicants assume examiner intended to state claims 1-9 and 16-28 are pending, and respond only to the rejection of these claims accordingly.

Independent claims 1, 16 and 21 are amended herein. All claims are provided for examiner's convenience, and this complete listing of the claims shall supersede and replace any previously submitted.

1. [Currently Amended] A high speed learning method, comprising:
dividing portions of a network device memory corresponding to a data table into parts;
distributing data entries in the table memory arranged in an order to provide periodic
empty data entry spaces in each part; and
redistributing data entries in only a part of the table memory in which an amount of data
entries in the part is changed in order to maintain the order of the table without
redistributing all the data entries in the portions of the memory corresponding to
the table.

2. [Original] The method of claim 1, wherein changing the amount of data entries
includes one of inserting and deleting a data entry.

3. [Original] The method of claim 1, wherein the order is a logical ascending and/or descending order of the entries and a logical origin is assigned to the logically first entry in each part to find the entries in each part regardless of the position of one or more empty spaces in each part.
4. [Original] The method of claim 3, wherein the distributing data entries includes moving data entries between parts of the table to maintain a substantially even distribution of the data entries and a substantially even distribution of the empty data entry spaces in each of the parts of the table and reassigning the logical origin of a part to a new logically first entry in the part.
5. [Original] The method of claim 1, wherein the distributing data entries is performed substantially continuously.
6. [Original] The method of claim 5, further comprising using a balancing engine for the distributing data entries.
7. [Original] The method of claim 1, further comprising using a lookup engine to determine a part of the table having a data entry.
8. [Original] The method of claim 7, further comprising using an entry engine to send a data entry key to the lookup engine and receive from the lookup engine a number of a part of the table having the location of the data entry.

9. [Original] The method of claim 8, wherein the entry engine reads the part of the table corresponding to the number, sorts the entries in the part using one or more empty data entry spaces, and writes the sorted entries back into the part of the table.

10-15 [Cancelled]

16. [Currently Amended] A[n] high speed learning apparatus, comprising:
a memory controller coupled to a network device memory; and
a balancing engine coupled to the memory controller to distribute data entries across sections of the network device memory corresponding to a data table including substantially maintaining at least one empty data entry space in each section.

17. [Original] The apparatus of claim 16, the balancing engine further comprising:
a dynamic section size allocator to select a size for the sections of the table;
a section count monitor to monitor the number of the sections in the table;
a key entry count monitor to monitor the number of key entries in each section;
a key entry count comparator to compare the number of key entries in one section with the number of entries in at least one other section;
a scan pattern controller to control a pattern for performing the distributing of the key entries across the sections of the table; and
a key entry rippler to move the key entries within a section and/or between the sections.

18. [Original] The apparatus of claim 16, further comprising:
a lookup engine coupled to the memory controller to determine a section number of the
table containing a given key entry; and
an entry engine to receive the section number from the lookup engine and insert, delete,
and/or alter key entries in a section of the table corresponding to the section
number.

19. [Original] The apparatus of claim 18, the lookup engine further comprising a
means for finding a key entry in the table.

20. [Original] The apparatus of claim 18, the entry engine further comprising:
a section reader to read a section of the table from memory based on the section number
from the lookup engine;
a key entry inserter/deleter to insert and/or delete an entry from the section;
a key entry sorter to sort key entries in the section after a key entry is inserted or deleted;
and
a section writer to write the section back into the table in memory.

21. [Currently Amended] A[n] high speed learning article of manufacture,
comprising:
a machine-readable medium containing content that, when executed, causes an accessing
machine to:

distribute data entries in portions of a network device memory corresponding to a table arranged in an order to provide periodic empty data entry spaces; and redistribute data entries in a part of the table memory in which a data entry was changed to maintain the order without redistributing all the data entries in the portions of the memory corresponding to the table.

22. [Original] The article of manufacture of claim 21, wherein the instructions cause the machine to implement an ascending and/or descending ordering of the entries.

23. [Original] The article of manufacture of claim 21, wherein a data entry change includes adding and/or deleting a data entry.

24. [Original] The article of manufacture of claim 21, wherein the instructions cause a machine to distribute data entries by moving data entries between sections of the table to maintain a substantially even distribution of the data entries and a substantially even distribution of the empty data entry spaces in each of the sections of the table.

25. [Original] The article of manufacture of claim 21, wherein the instructions cause a machine to distribute data entries substantially continuously.

26. [Original] The article of manufacture of claim 28, further comprising instructions for implementing a balancing engine for the distributing data entries to maintain empty spaces in sections of the table.

27. [Original] The article of manufacture of claim 21, further comprising instructions for implementing a lookup engine to determine a section of the table having a location for a data entry.
28. [Original] The article of manufacture of claim 27, further comprising instructions for causing the machine to implement an entry engine that reads the section of the table corresponding to the section number, sorts the entries in the section using one or more empty data entry spaces, and writes the sorted entries back into the section of the table corresponding to the section number.

Rejections Under 35 U.S.C. § 112

In the office action, claims 1-9 and 16-28 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. (Office action, page 2, section 2) Each of the independent claims 1, 16 and 21 stand rejected for “insufficient antecedent basis”. Applicants have amended the claims to overcome the rejection.

Applicants therefore respectfully request withdrawal of the 35 U.S.C. 112 rejections of independent claims 1, 16 and 21. In as much as dependent claims 2-9, 17-20 and 22-28 depend from and include the recitations of independent claims 1, 16 and 21 respectively, applicants request withdrawal of the 35 U.S.C. 112 rejections from these claims as well.

Rejections Under 35 U.S.C. § 101

In the office action, claims 1-28 stand rejected under 35 U.S.C. 101, citing MPEP 2106 IV.B.2.(b). The office action asserts the claims are non-statutory subject matter because the use of a computer has not been indicated, and they do not indicate the use of hardware “producing any tangible result and/or being limited to a practical application within the technological arts”. (Office action, page 3, paragraph 2)

Each of the amended claims 1, 16 and 21 recite “a network device”. Further, the invention produces the tangible result of dividing portions of a network device memory corresponding to a data table into parts, and enables the use of larger portions of a network device memory corresponding to a data table than do traditional methods, which is a practical application within the technological arts.

Applicants respectfully submit the amended independent claims 1, 16 and 21 traverse the 35 U.S.C. 101 rejections, and request the rejections be withdrawn. In as much as dependent claims 2-9, 17-20 and 22-28 depend from and include the recitations of independent claims 1, 16 and 21 respectively, applicants request withdrawal of the 35 U.S.C. 112 rejections from these claims as well.

Rejections Under 35 U.S.C. § 103

In the office action, claims 1-9 and 16-28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Jyn-Herng Chow (U.S. Patent Number 6,304,866), (hereinafter “Chow”) in view of “Applicant’s Admitted Prior Art (hereinafter “APA”). 35 U.S.C. §103(a) sets out in relevant part:

“(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the difference between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.”

With respect to claim 1, the office action asserts that Chow teaches applicants’ claim recitations with the exception of “arrangement of data in the table”, but that APA “discloses the table entries are sorted in ascending/descending alphanumeric order”. (Office action, page 6, paragraph 1). Applicants, however, submit that the combined references do not teach or make obvious applicants’ invention in as much as Chow does not disclose or describe at least applicants’ recited “distributing data entries in the table arranged in an order to provide periodic empty data entry spaces in each part”.

Chow discloses “it deposits the resultant data item(s) into different ones of the sort partitions according to a predetermined *“round robin” order*. Thus, each task execution

unit *evenly* distributes data entries into all of the sort partitions. After the input date is *completely distributed* into the sort partitions, the aggregate task of step 706 is complete.” (column 9, lines 17-23) (emphasis provided). Chow describes evenly and completely distributing data into sort partitions according to a “round robin” order, however, Chow does not describe applicants’ claimed ‘provide periodic empty data entry spaces in each part’.

Therefore, applicants respectfully submit the 35 U.S.C. §103(a) rejection of independent claim 1 is improper as the combined references fail to teach or make obvious at least the indicated claim recitation, and request withdrawal of the rejection. In as much as claims 2-9 depend from and include all the recitations of independent claim 1, applicants submit the 35 U.S.C. §103(a) rejections of claims 2-9 are also improper, and likewise request the withdrawal of the rejections from claims 2-9.

Regarding claims 16-20 and 21-28, the office action relies upon the same grounds for rejection as are asserted against claim 1-9, and applicants have shown the rejections of claims 1-9 to be improper. Therefore, applicants respectfully submit that the rejections of claims 16-20 and 21-28 are likewise improper, and request withdrawal of the rejections of claims 16-20 and 21-28.

Applicants respectfully submit that all pending claims, 1-9, 16-20 and 21-28, as amended, have been herein shown allowable over the combined references.

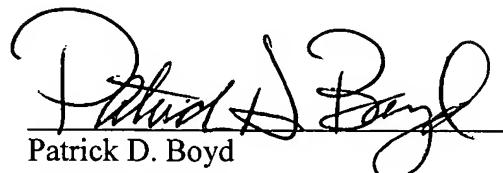
CONCLUSION

In light of the points and arguments set forth herein, applicants respectfully submit that the rejections have been properly overcome, and all claims are allowable as amended.

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Respectfully submitted,

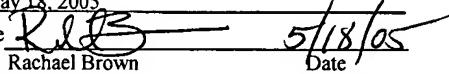
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